

TRIBUTARY ANALYSIS MONITORING SYSTEM**Abstract**

A monitoring system for a fleet of vehicles includes at least one data acquisition and analysis module (DAAM) mounted on each vehicle in the fleet, a control module on each vehicle in communication with each DAAM, and terminal module located remotely with respect to the vehicles in the fleet. Each DAAM collects/analyzes sensor data to generate analysis results that identify the state of a plurality of systems of the vehicle. Each vehicle's control module collects/analyzes the analysis results from each onboard DAAM to generate vehicle status results that identify potential sources of vehicle anomalies. The terminal module collects/analyzes the analysis results and vehicle status results transmitted from each control module from the fleet of vehicles to identify multiple occurrences of vehicle anomalies and multiple occurrences of those vehicle systems operating at a performance level that is unacceptable. Results of the terminal module's analysis are provided to organizations responsible for the operation, maintenance and manufacturing of the vehicles in the fleet as well as the plurality of systems used in the fleet.